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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/774,709	02/01/2001	Daisaku Horie	44239-076	3392

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EXAMINER

SELBY, GEVELL V

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/774,709	Applicant(s) HORIE, DAISAKU	
	Examiner Gevell Selby	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 9, 10 and 12-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 9, 10 and 12-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/1/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see the amendment, filed 2/22/05, with respect to the rejection(s) of claim(s) 1-18 under 35 U.S.C. 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Katayama et al., US 6,424,752.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1-3, 9, 10, and 12-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752.**

In regard to claims 1 and 9, Cullen, US 6,038,349, discloses an image processing device and method for producing an entire image of a subject by joining a plurality of divided images produced from divided portions defined in said subject and having partially overlapping regions, comprising:

a setting portion (see figure 2, elements 14 and 16: a portion of the central processor, memory and other internal circuits execute an image processing program to combine the images as described) for setting a plurality of sets each including

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corresponding points in the two divided images having the overlap regions overlapping each other (see column 11, lines 4-8);

a transforming portion (see figure 2, elements 14 and 16: a portion of the central processor, memory and other internal circuits execute an image processing program to combine the images as described) for performing geometric transformation of one or both of the two divided images based on said plurality of corresponding point sets (see column 11, lines 8-23); and

a joining portion (see figure 2, elements 14 and 16: a portion of the central processor, memory and other internal circuits execute an image processing program to combine the images as described) for joining the two divided images based on the plurality of corresponding point sets after the geometric transformation (see column 11, lines 23-30).

The Cullen reference does not disclose that said joining portion joins said divided images by placing importance on a specific region where a greater number of said divided images overlap with each other.

Katayama et al., US 6,424,752, discloses an image synthesis apparatus and method wherein the joining portion joins said divided images by placing importance on a specific region (center region) where a greater number of said divided images overlap each other (see figure 25 and 26 and column 13, line 8 to column 14, line 42).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, to have said joining portion joins said divided images by placing

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importance on a specific region where a greater number of said divided images overlap with each other, in order for the reference image used when combining the images correspond to the most images so the processor can combine the images faster.

In regard to claim 2, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing device according to claim 1, wherein, said setting portion sets in said specific portion the corresponding point sets larger in number than those in said other portion for placing importance on said specific portion (see Cullen: column 11, lines 47-58).

In regard to claim 3, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing device according to claim 1, wherein, said transforming portion performs geometric transformation using the transformation parameter obtained by giving high weight to the corresponding point set in said specific portion for placing importance on said specific portion (see Cullen: column 11, lines 47-58 and column 12, lines 25-55).

In regard to claim 10, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing method according to claim 9, wherein said plurality of divided images include at least first, second, third and fourth divided images arranged in upper right, upper left, lower right and lower left positions, and said four divided images overlap with each other in a region defined by a central portion of said entire image (see Cullen: figure 9, and column 12, line 62 to column 13, line 5).

In regard to claim 12, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing method according to claim 9, further comprising the steps of:

setting the plurality of sets of corresponding points corresponding to each other and located in the two divided images having the overlap regions overlapping with each other; and performing geometric transformation on one or both of said two divided images based on said plurality of corresponding point sets, wherein said two divided images are joined together after said geometric transformation (see Cullen: column 11, lines 4-30).

In regard to claims 13 and 20, Cullen, US 6,038,349, discloses the image processing device and method comprising the steps of:

obtaining a plurality of divided images produced from divided portions defined in a subject and having partially overlapping regions (see column 11, lines 4-8);

detecting a direction of positional shift between the two divided images having the overlap regions overlapping with each other (see column 11, lines 4-15);

setting a plurality of sets each including corresponding points in said two divided images based on the detected positional shift direction (see column 11, lines 4-15); and

joining said two divided images based on the set corresponding point sets (see column 11, lines 25-30).

The Cullen reference does not disclose that said corresponding points are set based on one of the two divided images located further remotely from a region where at least three partial images including the other of the two divided images overlap with each other.

Katayama et al., US 6,424,752, discloses an image synthesis apparatus and method wherein said corresponding points are set based on one of the two divided images (images 1 and 2) located further remotely from a region where at least three partial images (images 1, 2, and 6) including the other of the two divided images overlap with each other (see figure 18 and 19 and column 10, lines 26-57).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, to have said corresponding points are set based on one of the two divided images located further remotely from a region where at least three partial images including the other of the two divided images overlap with each other, in order that only two images at a time are needed for processing thus saving memory.

In regard to claim 14, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing method according to claim 13, wherein, characteristic points corresponding to each other and located in the overlap regions of the divided images are detected based on the detected positional shift direction, and the detected characteristic points are set as the corresponding point set (see Cullen: column 9, lines 49-55).

In regard to claim 15, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing method according to claim 14, wherein, the characteristic point is detected in the overlap region of one of said two divided images, a point corresponding to the detected characteristic point is detected in the overlap region of the other divided image, and a set of said characteristic points is set as the corresponding point set (see Cullen: column 10, lines 29-40).

In regard to claim 16, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing device according to claim 14, wherein, the characteristic points are detected in the overlap regions of said two divided images, respectively, and a set of the characteristics points corresponding to each other is set as the corresponding point set (see Cullen: column 11, lines 4-15).

In regard to claim 17, Cullen, US 6,038,349, discloses a computer readable medium bearing an image processing program, the program, when executed, causing a computer to execute the steps of:

obtaining a plurality of divided images produced from divided portions defined in a subject and having partially overlapping regions (see column 11, lines 4-15); and

producing an entire image representing said subject by joining said plurality of produced divided images (see column 11, lines 16-30).

The Cullen reference does not disclose that said joining portion joins said divided images by placing importance on a specific region where a greater number of said divided images overlap with each other.

Katayama et al., US 6,424,752, discloses an image synthesis apparatus and method wherein the joining portion joins said divided images by placing importance on a specific region (center region) where a greater number of said divided images overlap each other (see figure 25 and 26 and column 13, line 8 to column 14, line 42).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, to have said joining portion joins said divided images by placing importance on a specific region where a greater number of said divided images overlap with each other, in order for the reference image used when combining the images correspond to the most images so the processor can combine the images faster.

In regard to claim 18, Cullen, US 6,038,349, discloses a computer readable medium bearing an image processing program the program, when executed, causing a computer to execute the steps of:

obtaining a plurality of divided images produced from divided portions defined in a subject and having partially overlapping regions (see column 9, lines 33-47);

detecting a direction of positional shift between the two divided images having the overlap regions overlapping with each other (see column 9, lines 49-55);

setting a plurality of sets each including corresponding points in said two divided images based on the detected positional shift direction (see column 11, lines 16-30); and

joining said two divided images based on the set corresponding point sets (see column 11, lines 16-30).

The Cullen reference does not disclose that said corresponding points are set based on one of the two divided images located further remotely from a region where at least three partial images including the other of the two divided images overlap with each other.

Katayama et al., US 6,424,752, discloses an image synthesis apparatus and method wherein said corresponding points are set based on one of the two divided images (images 1 and 2) located further remotely from a region where at least three partial images (images 1, 2, and 6) including the other of the two divided images overlap with each other (see figure 18 and 19 and column 10, lines 26-57).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, to have said corresponding points are set based on one of the two divided images located further remotely from a region where at least three partial images including the other of the two divided images overlap with each other, in order that only two images at a time are needed for processing thus saving memory.

In regard to claims 19, Cullen, US 6,038,349, discloses an image processing device and method for producing an entire image of a subject by joining a plurality of divided images produced from divided portions defined in said subject and having partially overlapping regions, comprising:

a setting portion (see figure 2, elements 14 and 16: a portion of the central processor, memory and other internal circuits execute an image processing program to combine the images as described) for setting a plurality of sets each including

corresponding points in the two divided images having the overlap regions overlapping each other (see column 11, lines 4-8);

a transforming portion (see figure 2, elements 14 and 16: a portion of the central processor, memory and other internal circuits execute an image processing program to combine the images as described) for performing geometric transformation of one or both of the two divided images based on said plurality of corresponding point sets (see column 11, lines 8-23); and

a joining portion (see figure 2, elements 14 and 16: a portion of the central processor, memory and other internal circuits execute an image processing program to combine the images as described) for joining the two divided images based on the plurality of corresponding point sets after the geometric transformation (see column 11, lines 23-30).

The Cullen reference does not disclose that said joining portion joins said divided images by placing importance on a specific region near the center of a joined image formed by joining all of said divided images.

Katayama et al., US 6,424,752, discloses an image synthesis apparatus and method wherein the joining portion joins said divided images by placing importance on a specific region near the center of a joined image formed by joining all of said divided images (see figure 25 and 26 and column 13, line 8 to column 14, line 42).

It would have been obvious to one of ordinary skill in the art at the time of invention to have been motivated to modify Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, to have said joining portion joins said divided images by placing

importance on a specific region near the center of a joined image formed by joining all of said divided images, in order for the reference image used when combining the images correspond to the most images so the processor can combine the images faster.

In regard to claim 21, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing device according to claim 19, wherein the corresponding points set by said setting portion include corresponding points separated from each other by a prescribed distance (see Cullen: column 11, lines 4-8).

In regard to claim 22, Cullen, US 6,038,349 in view of Katayama et al., US 6,424,752, discloses the image processing device according to claim 13, wherein the corresponding points set by said setting portion include corresponding points separated from each other by a prescribed distance (see Cullen: column 11, lines 4-8).

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gevell Selby whose telephone number is 571-272-7369. The examiner can normally be reached on 8:00 A.M. - 5:30 PM (every other Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on 571-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gvs



DAVID L. OMETZ
PRIMARY EXAMINER